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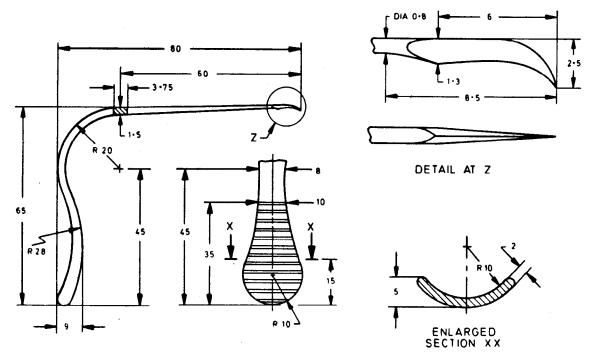




### Indian Standard

# SPECIFICATION FOR KNIFE, DOWNWARD CUTTING, ZOELLNER'S PATTERN

- 1. Scope Covers dimensional and other requirements for downward cutting Zoellner's knife used in ENT microsurgery.
- 2. Shape and Dimensions As shown in Fig. 1.



All dimensions in millimetres.

FIG. 1 KNIFE, DOWNWARD CUTTING, ZOELLNER'S PATTERN

- 2.1 A deviation of  $\pm$  2.5 percent shall be allowed on all dimensions.
- 3. Material Stainless steel conforming to the Designation 30Cr13 of IS: 6603-1972 'Specification for stainless steel bars and flats'.
- 4. Workmanship and Finish
- 4.1 All edges other than the cutting edge of the knife shall be rounded.
- 4.2 The cutting edge shall be surgically sharp.
- **4.3** The knife shall be free from feathers, kincks, high spots, waviness or undulation when examined under a magnification of 60x.
- 4.4 The cutting edge of the knife shall be centred and in one plane passing through the centre of the handle.
- 4.5 The knife shall be passivated and matt finished.
- 4.6 Proper grooves shall be provided in the handle for easy grip-

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- 4.7 The knife shall be forged in one piece to the required shape and size.
- 4.8 The knife shall be well balanced.
- 5. Heat Treatment The knife shall be hardened and tempered to a hardness of 380 to 480 HV.

#### 6. Tests

- **6.1** Flexibility The knife shall be held from the handle in a vice with the blade projecting above the jaws. A force shall be applied at 8.5 mm from tip of the blade so as to displace it through 5 mm in a plane perpendicular to the plane passing through the axis and the cutting edge of the blade. On releasing the force the blade shall return to its normal position without being damaged or taking any permanent set.
- **6.2** Sharpness of the Cutting Edge The knife shall be made to cut a piece of chamois leather. Five such cuts 25 mm long approximately shall be made. The knife shall cut the chamois leather cleanly and without pulling the leather.
- **6.3** Corrosion Resistance The knife shall show no sign of corrosion when tested in accordance with IS: 7531-1975 'Method for boiling and autoclaving test for corrosion resistance of stainless steel surgical instruments'.
- 7. Marking The knife shall be marked with the manufacturer's name, initials or registered trademark.
- 7.1 ISI Certification Marking Details available with the Indian Standards Institution.
- 8. Packing The knife shall be thoroughly cleaned, preferably ultrasonically, and dried before packing. The knife shall be wrapped in moisture-proof paper or packed in polyethylene bag. Each knife shall then be packed in individual carton in such a way that its working end is protected from coming in contact with hard surface resulting in any damage. The knife may also be packed as agreed to between the purchaser and the supplier.